AMENDMENTS TO THE CLAIMS

1-59. (Canceled).

60. (New) A process for forming at least one discontinuous interface region between two regions of semiconductor material, the process comprising:

forming at least one region of dielectric material comprising nitrogen in the vicinity of at least a portion of a boundary between the two regions of semiconductor material, wherein said dielectric material is in the form of a plurality of islands, thereby controlling electrical resistance at the interface.

61. (New) The process according to claim 60, wherein forming the at least one region of dielectric material comprises:

implanting the dielectric material in the vicinity of the surface of a first of the regions of semiconductor material.

62. (New) The process according to claim 60, wherein the dielectric material is deposited at an energy sufficient to create a discontinuous layer of dielectric material.

63. (New) The process according to claim 60, wherein the dielectric material is deposited at a thickness and covering a portion of the boundary between the two regions of semiconductor material sufficient to control base current flowing between the two regions of semiconductor material.

64. (New) The process according to claim 60, wherein the dielectric material is implanted at the surface of the first region of semiconductor material.

65. (New) The process according to claim 60, wherein atoms or molecules of the dielectric material are implanted at the surface of one of the regions of semiconductor material.

66. (New) The process according to claim 60, wherein atoms or molecules of the dielectric material are implanted under the surface of one of the regions of semiconductor material.

67. (New) The process according to claim 60, wherein one of the regions of

semiconductor material is monocrystalline silicon and the dielectric material includes nitrogen atoms implanted in the monocrystalline silicon.

68. (New) The process according to claim 66, wherein the nitrogen atoms are implanted at an energy of about 0.1 KeV to about 5 KeV.

69. (New) The process according to claim 66, wherein the nitrogen atoms are implanted at a dose of from about 1×10^{11} to about 1×10^{14} and with an energy of about 0.1 KeV to about 5 KeV.

70. (New) The process according to claim 60, further comprising:

subjecting the semiconductor material and the implanted dielectric material to an annealing step.

71. (New) The process according to claim 60, further comprising:

utilizing a mask to selectively implant the dielectric material in the semiconductor.

72. (New) The process according to claim 60, further comprising:

implanting a layer of the dielectric material; and

selectively removing portions of the dielectric material.

73. (New) The process according to claim 60, wherein forming the at least one region of dielectric material comprises:

depositing a discontinuous film of the dielectric material by a chemical vapor deposition process.

74. (New) The process according to claim 72, wherein the chemical vapor deposition process is a low pressure chemical vapor deposition process or a plasma enhanced chemical vapor deposition process.

75. (New) The process according to claim 72, wherein the chemical vapor deposition process is carried out using silane or dichlorosilane with NH_3 or N_2O.

76. (New) The process according to claim 72, wherein the film has a thickness of about 1 Å to about 10 Å.

77. (New) The process according to claim 72, wherein the film has a thickness of less than one monolayer.

78. (New) The process according to claim 72, wherein the chemical vapor deposition is carried out at a temperature of about 600° C to about 800° C.

79. (New) The process according to claim 72, wherein deposition gases flow for less than about 5 seconds.

80. (New) The process according to claim 72, wherein the chemical vapor deposition process8utilizes at least one silicon source gas and at least one nitrogen/oxygen source gas and a ratio of silicon source gas to nitrogen/oxygen source gas is controlled to produce a desired silicon-nitrogen/oxygen stoichiometry.

81. (New) A semiconductor device comprising:

a region of a first semiconductor material;

a region of a second semiconductor material; and

an interface region including at least one region of dielectric material comprising nitrogen in the vicinity of at least a portion of a boundary between said first and second semiconductor regions, thereby controlling electrical resistance at the interface.

82. (New) The semiconductor device according to claim 81, wherein the dielectric material is implanted at the surface of the first region of semiconductor material.

83. (New) The semiconductor device according to claim 81, wherein atoms of the dielectric material are implanted at the surface of one of the regions of semiconductor material.

84. (New) The semiconductor device according to claim 81, wherein atoms of the dielectric material are implanted under the surface of one of the regions of semiconductor material.